

What is claimed is:

1. A single phase induction motor comprising:

a stator installed at an inner circumferential surface of a motor body, the  
5 stator on which a plurality of coils are wound;

a rotor rotatably installed at a center portion of the stator and provided with  
a rotation shaft at a center thereof; and

a magnet unit freely and rotatably installed between the stator and the  
rotor with an air gap.

10

2. The single phase induction motor of claim 1, wherein the magnet  
unit comprises:

a ring magnet located between the stator and the rotor;

a supporter coupled to an one end of the ring magnet, for supporting the  
15 ring magnet; and

a bearing press-fit into a center of the supporter so as to be rotatably  
coupled to an outer circumferential surface of the rotation shaft.

3. The single phase induction motor of claim 2, wherein the ring  
20 magnet is a cylindrical shape.

4. The single phase induction motor of claim 2, wherein the  
supporter is a non-magnetic substance.

5. The single phase induction motor of claim 2, wherein the supporter is integrally injection-molded at one side of the ring magnet.

6. The single phase induction motor of claim 2, wherein the supporter is integrally injection-molded at both sides of the ring magnet.

7. The single phase induction motor of claim 2, the supporter is formed of the same material as the ring magnet.

8. The single phase induction motor of claim 2, where the bearing is a ball bearing type.

9. The single phase induction motor of claim 2, wherein the bearing is an oilless bearing type.

10. The single phase induction motor of claim 1, wherein the magnet unit comprises:

a back yoke located between the stator and the rotor;

a plurality of magnets attached to an outer circumferential surface of the back yoke;

a supporter coupled to one end of the back yoke so as to support the back yoke; and

a bearing press-fit into a center of the supporter so as to be rotatably coupled to an outer circumferential surface of the rotation shaft.

11. The single phase induction motor of claim 10, wherein the back yoke is a magnetic substance.

12. The single phase induction motor of claim 10, wherein the back  
5 yoke is a non-magnetic substance.

13. The single phase induction motor of claim 10, wherein the supporter is integrally injection-molded at one side of the back yoke.

10 14. The single phase induction motor of claim 10, wherein the supporter is integrally injection-molded at both sides of the back yoke.

15. The single phase induction motor of claim 10, wherein a thickness of the back yoke is preferably set as 0.2~0.6mm.

15

16. The single phase induction motor of claim 1, wherein the magnet unit comprises:

a molding located between the stator and the rotor;

a magnet mounted in the molding;

20 a supporter coupled to one end of the molding so as to support the molding; and

a bearing press-fit into a center of the supporter so as to be rotatably coupled to an outer circumferential surface of the rotation shaft.

17. The single phase induction motor of claim 16, wherein the molding is a non-magnetic substance.

18. The single phase induction motor of claim 16, wherein the  
5 supporter is integrally injection-molded at one side of the molding.

19. The single phase induction motor of claim 16, wherein the supporter is integrally injection-molded at both sides of the molding.

10 20. The single phase induction motor of claim 16, wherein the magnet has a certain curvature and is arranged in the molding towards a circumference direction.

21. The single phase induction motor of claim 16, wherein the magnet  
15 is formed as a cylindrical shape thus to be arranged in the molding.